

Notice of Allowability

Application No.

10/055,335

Examiner

Ranodhi Serrao

Applicant(s)

POSPESEL ET AL.

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 10 April 2006.
2. ☒ The allowed claim(s) is/are 1-17.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some* c) ☐ None of the:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
- (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☒ Interview Summary (PTO-413), Paper No./Mail Date 04102006.
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____.


RUPAL DHARIA
SUPERVISORY PATENT EXAMINER

DETAILED ACTION

EXAMINER'S AMENDMENT

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.
2. Authorization for this examiner's amendment was given in a soft copy from Mr. Jon Gibbons (Reg. No. 37,333) on 16th May 2006.

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IN THE CLAIMS

1. (Previously Presented) A method for simultaneous communication over a closed loop bus to permit at least two master agents and slave agent on the bus to communicate, ~~the method on a first master agent on the closed loop bus having an input and an output to the closed loop bus, the method on the first master agent comprising:~~

[[C]]coupling at least one slave agent with at least two master agents including a first master agent and a second master agent on a closed loop bus in a ring network for simultaneous communications, wherein the simultaneous communications on the bus permits two or more of the master agents and the slave agent on the bus to communicate at one time independent of a clock signal;

determining if there is data from at least one of the master agents, and if there is data from the at least one of the master agents then performing:

testing if the data from the closed loop bus is a token, wherein the token is used for complete roundtrip communication transactions so as to avoid deadlock on the closed loop bus;

in response to the data from the closed loop bus being a token, then moving the data from the at least one of the master agents to the closed loop bus and discarding the token from the closed loop bus; and

in response to the data not being a token from the closed loop bus, then moving the data from the input of the closed loop bus to the output of the closed loop bus;

wherein in response to the data not being from the at least one of the master agents and the data is from the closed loop bus, then moving the data from the input of the closed loop bus to the output of the closed loop bus.

2. (Previously Presented) The method according to claim 1, the method further comprising:

determining at least one of

if there is data from the closed loop bus, and

if there is data from the at least one of the master agents.

3. (Previously Presented) The method according to claim 1, the method further comprising:

determining at least one of if there is no data on the output and if an advance line is asserted and in response to the at least one of no data on the output and an advance line is asserted then determining at least one of

if there is data from the closed loop bus, and

if there is data from the at least one of the master agents.

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4. (Previously Presented) The method according to claim 1, the method further comprising:

determining if the at least one of the master agents is coupled to an access macro and in response to the at least one of the master agents is coupled to an access macro placing tokens on the closed loop bus, where the a maximum number of tokens on the closed loop bus is set equal to a total number of master agents plus the total number of slave agents less one.

5. (Previously Presented) A method for simultaneous communication over a closed loop bus, the method on a slave agent having an input and an output to the closed loop bus comprising:

coupling at least one slave agent with at least two master agents including a first master agent and a second master agent on a closed loop bus in a ring network for simultaneous communications, wherein the simultaneous communications on the bus permits two or more of the master agents and the slave agent on the bus to communicate at one time independent of a clock signal;

determining if there is data from the closed loop bus or from the at least one slave,

in response to being data from the closed loop bus but not from the at least one slave then moving the data from the closed loop bus to the output, and

in response to being data from the at least one slave but not the closed loop bus then moving the data from the at least one slave to the output;

determining if there is data both from the closed loop bus and the at least one slave and in response to being data from both the bus and the at least one slave then:

if the closed loop bus has priority then moving the data from the closed loop bus to the output and setting the priority to the at least one slave; and

if the closed loop bus does not have priority then moving the data from the

at least one slave to the output and setting the priority to the closed loop bus.

6. (Previously Presented) The method according to claim 5, the method further comprising:

determining at least one of

if there is data from the closed loop bus, and

if there is data from the at least one slave.

7. (Previously Presented) The method according to claim 5, the method further comprising:

determining at least one of if there is no data on the output or if an advance line is asserted and in response to the at least one of no data on the output and an advance line is asserted then determining at least one of

if there is data from the closed loop bus, and

if there is data from the at least one slave

8. (Currently Amended) A method for simultaneous communication over a closed loop bus to permit at least two master agents and slave agent on the bus to communicate, ~~the method on a master agent having an input and an output to the closed loop bus~~, the method ~~on the master agent~~ comprising:

coupling at least one slave agent with at least two master agents including a first master agent and a second master agent on a closed loop bus in a ring network for simultaneous communications, wherein the simultaneous communications on the bus permits two or more of the master agents and the slave agent on the bus to communicate at one time independent of a clock signal;

receiving a reset command;

determining after being reset if at least one of the master agents is coupled to an access macro and in response to the at least one of the master agents is coupled to the access macro then placing $n-1$ tokens on the closed loop bus, where n is the total number of master agents and slave agents communicating on the closed loop bus, and wherein the token is used for complete roundtrip communication transactions so as to avoid deadlock on the closed loop bus.

9. (Previously Presented) A data communications network for simultaneous communications between two or more agents comprising:

- at least one agent designated as a slave agent coupled to a closed loop communications bus in a ring network for simultaneous communications;

- at least two agents designated as a first master agent and a second master agent respectively, coupled to the closed loop communications bus;

- an interface to each of the master agents with an input from the closed loop bus and an output to the closed loop bus, the interface comprising a plurality of latches for testing if there is data, and

- in response to there being data from at least one of the master agents then testing if the data from the closed loop bus is a token, wherein the token is used for complete roundtrip communication transactions so as to avoid deadlock on the closed loop bus;

- in response to the data from the closed loop bus is a token, then moving the data from the master to the closed loop bus and discarding the token; and

- in response to the data is not a token from the closed loop bus, then moving the data from the input of the closed loop bus to the output of the closed loop bus;

- in response to the data is not from the at least one of the master agents and the

data is from the closed loop bus, then moving the data from the input of the closed loop bus to the output of the closed loop bus.

10. (Previously Presented) The data communications network according to claim 9 further comprising:

an interface on each slave agent with an input to the closed loop bus and an output to the closed loop bus, the interface comprising a plurality of latches for testing if there is data from the closed loop bus or from the slave agent and if there is data from the closed loop bus but not from the slave then moving the data from the closed loop bus to the output and if there is data from the slave but not from the closed loop bus then moving the data from the slave to the output;

wherein the plurality of latches tests if there is data both from the closed loop bus and data from the slave and in response to there is data from both the closed loop bus and from the slave then testing if the closed loop bus has priority and:

in response to the closed loop bus having priority then moving the data from the closed loop bus to the output and setting the priority to the slave; and

in response to the closed loop bus does not having priority then moving the data from the slave to the output and setting the priority to the closed loop bus.

11. (Original) The data communications network, according to claim 10, wherein the data further includes control, data and parity data.

12. (Previously Presented) The data communications network, according to claim 10, wherein at least one of the communication agents is coupled to a first brand of computer and at least one of the communications agents is coupled to a second brand of computer so as to form a heterogeneous environment.

13. (Previously Presented) The data communications network, according to claim 10, wherein the closed loop bus is selected from a group of buses consisting of wire, wireless and infrared.

14. (Previously Presented) The data communications network, according to claim 9, wherein the slave agent includes:

an interface with an input from the closed loop bus and an output to the closed loop bus, the interface comprising a plurality of latches for testing if the data is for the slave agent and in response to the data being for the slave agent then transferring the data to the slave.

15. (Previously Presented) The data communications network, according to claim 9, wherein the interface to each of the master agents further comprises a plurality of latches for testing if the data is for the at least one of the master agents and if the data is for the at least one of the master agents, then passing the data to the at least one of the master agents.

16. (Currently Amended) A computer readable medium containing programming instructions for simultaneous communication over a closed loop bus to permit at least two master agents and slave agent on the bus to communicate, ~~the method on a master agent having an input and an output to the closed loop bus~~, the programming instructions comprising:

coupling at least one slave agent with at least two master agents including a first master agent and a second master agent on a closed loop bus in a ring network for simultaneous communications, wherein the simultaneous communications on the bus permits two or more of the master agents and the slave agent on the bus to

communicate at one time independent of a clock signal;

receiving a reset command;

determining after being reset if at least one of the master agents is coupled to an access macro and in response to the at least one of the master agents is coupled to the access macro then placing $n-1$ tokens on the closed loop bus, where n is the total number of master agents and slave agents communicating on the closed loop bus, and wherein the token is used for complete roundtrip communication transactions so as to avoid deadlock on the closed loop bus.

17. (Currently Method) A computer readable medium containing programming instructions for simultaneous communication over a closed loop bus to permit at least two master agents and slave agent on the bus to communicate, ~~the method on a master agent having an input and an output to the closed loop bus,~~ the programming instructions comprising:

coupling at least one slave agent with at least two master agents including a first master agent and a second master agent on a closed loop bus in a ring network for simultaneous communications;

determining if there is data from at least one of the master agents, and if there is data from the at least one of the master agents then performing:

testing if the data from the closed loop bus is a token, wherein the token is used for complete roundtrip communication transactions so as to avoid deadlock on the closed loop bus;

in response to the data from the closed loop bus being a token, then moving the data from the at least one of the master agents to the closed loop bus and discarding the token from the closed loop bus; and

in response to the data not being a token from the closed loop

bus, then moving the data from the input of the closed loop bus to the output of the closed loop bus;

wherein in response to the data not being from the at least one of the master agents and the data is from the closed loop bus, then moving the data from the input of the closed loop bus to the output of the closed loop bus.

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Allowable Subject Matter

3. Claims 1-17 are allowed. The following is an examiner's statement of reasons for allowance: In interpreting the claims, in light of the specification and the applicant's amendments filed on 10 April 2006, the Examiner finds the claimed invention to be patentably distinct from the prior art of record.

4. **Sakai et al. (U.S. Patent No. 6,005,869)** teaches a master station including at least a token packet (Iso) management table in which the overall band of the bus is partitioned into certain bands, rewrites the token packet (Iso) management table according to the bandwidth required in Isochronous data transmission between stations to at least control transmission of token packets (Iso) and dynamically control the bandwidth (**Sakai et al., Abstract, Fig. 8 and corresponding text**).

5. **Mancusi et al. (U.S. Patent No. 6,275,864)** teaches a wiring hub for interconnecting a plurality of network components to form a local area network, the wiring hub including a data signal bus and a programmable switching mechanism connected to the data signal bus. The switching mechanism includes a plurality of ports each of which can be electrically coupled to a different one of the plurality of network

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components so as to pass communications signals to and receive communications signals from the network component to which it is coupled. The programmable switching mechanism interconnects a selectable set of the plurality of ports together through the data signal bus and in any user selectable ordered sequence (**Mancusi et al.,**

Abstract, Fig. 3 and corresponding text).

6. However, the prior arts of record fail to teach or suggest individually or in combination that a method for simultaneous communication over a closed loop bus to permit at least two master agents and slave agent on the bus to communicate, the method comprising: coupling at least one slave agent with at least two master agents including a first master agent and a second master agent on a closed loop bus in a ring network for simultaneous communications, wherein the simultaneous communications on the bus permits two or more of the master agents and the slave agent on the bus to communicate at one time independent of a clock signal; determining if there is data from at least one of the master agents, and if there is data from the at least one of the master agents then performing: testing if the data from the closed loop bus is a token, wherein the token is used for complete roundtrip communication transactions so as to avoid deadlock on the closed loop bus; in response to the data from the closed loop bus being a token, then moving the data from the at least one of the master agents to the closed loop bus and discarding the token from the closed loop bus; and in response to the data not being a token from the closed loop bus, then moving the data from the input of the closed loop bus to the output of the closed loop bus; wherein in response to the data not being from

the at least one of the master agents and the data is from the closed loop bus, then moving the data from the input of the closed loop bus to the output of the closed loop bus as set forth in independent claims 1, 5, 8, 9, 16, and 17. Claims 1-17 are allowed because of the combination of other limitations and the limitations listed above.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ranodhi Serrao whose telephone number is (571)272-7967. The examiner can normally be reached on 8:00-4:30pm, M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rupal Dharia can be reached on (571)272-3880. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).